

10th Asian Congress of Nutrition

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The 10th Asian Congress of Nutrition (ACN) was literally held in the shadow of the world's tallest office building – the Taipei 101. The Taipei International Convention Center was the venue for the three-and-a-half-day program of plenary lectures (5), dialogues (3), symposia (21), and workshops (6) at this quadrennial scientific event. Moreover, there was a permanent poster session throughout the event, nestled near the exhibition area. The attendance of 1,400 delegates from 30 nations made this the largest gathering in the history of the ACN.

The local hosts were the Nutrition Society of Taiwan. On a related note, the Federation of Asian Nutrition Societies convened its regular meeting and selected Singapore as the site for the 11th ACN in 2011. The Council of the International Union of Nutritional Sciences (IUNS) also held its meeting in Taiwan to prepare for the 2009 International Congress of Nutrition in Bangkok; each of its members presented at least one invited talk in a symposium and moderated a session of the ACN.

Plenary program

The plenary program included hour-long talks by five renowned scientists from the USA, Chile, Japan, India and Australia, distributed between the first and last days' morning sessions. Dr Walter C. Willett's presentation, "Overview and perspectives in human nutrition," centered on dietary patterns and their associations with a reduced risk of chronic diseases. The Nurses' Health Study found that alcohol intake increased the risk of breast cancer, but that this risk was eliminated by a high intake of folic acid and dietary folates. On the other hand, fruits and vegetables were found to reduce the risk of cardiovascular disease (CVD), but had no influence on overall cancer risk.

Dr Hisanori Kato's presentation, "Nutrigenomics: the cutting edge and the Asian perspective," covered the recent advances in and the remaining limitations of the analytical methods in proteomics and metabolomics. Dr Kato emphasized that both the total diet and specific nutrients can influence the expression of genes, and postulated an eventual contribution of genomics to individualized nutrition. Dr Nita Bhandari presented "The new growth standard of the 21st century," a perspective on the 2006 World Health Organization (WHO) growth curves, which discussed the data collection that was implemented to cover the ethnic and geographic spectrum of the planet. Dr Bhandari highlighted that all previous growth curves were references to normative populations as they existed, whereas the 2006 growth curves represent a standard for how growth should occur.

Dr Mark L. Wahlqvist ended the sequence with his discourse on "The new Nutrition science in practice." The theoretical basis for nutrition science came out of the 2003–2007 Task Force on Eco-Nutrition of the IUNS, suggesting that nutritional science not only develops on the biomedical front, but also in the societal and environmental dimensions

of nutrition. The presentation illustrated the convergence of these dimensions with concrete examples, such as the issue of land use for food crops versus biofuels.

Free-paper sessions

Over 490 free papers were listed in the ACN program. Several of the best in each category were presented orally within the symposia. A total of 268 abstracts were presented in the poster session. Table 1 provides a breakdown of the number of posters on different topic areas. The range of topics is illustrative of the emerging research priorities among students and young investigators in the Asian region. The free papers on vitamin and mineral nutrition were the fourth most abundant among the topics, representing 8.5% of all posters. Interestingly, issues related to chronic disease, long-term function, and health comprised the top three free-paper topics, constituting over 50% of all programmed submissions.

The traditional hallmark interests of SIGHT AND LIFE have always been micronutrients and micronutrient malnutrition. This was recently updated to include the double-burden of nutrition and the extent to which vitamins and minerals play a role in either acute deficiencies or chronic diseases. For economy of space, however, this report focuses primarily on the explicit reports and observations in the area of micronutrient nutrition in its classic context of requirements and deficiencies.

In the vitamin and mineral nutrition section, two posters that caught people's attention were "Biological activities of banana peel" and "An apple a day, with or without the skin: vitamin content in parts of apple fruit." In terms of assessments, the paper on "Estimation of dietary selenium intakes of Taiwanese by a self-constructed food selenium content database" was intriguing. There were many papers on unique sources of pro-vitamin A carotenoids in Asian plants and algae, on the role of vitamins in the regulation of gene transcription of active proteins, and on toxic trace elements such as aluminum and arsenic.

Dialogue sessions

A series of three debates between two speakers with divergent views on a central topic were part of the program. Within the context of Asian culture, which generally favors harmony over confrontation, the debates were re-christened dialogues. Two of these sessions had specific relevance to micronutrient nutrition.

Dialogue D2 had as its topic "National fortification policy." Two observers, who were not native to Asia, provided their perspectives on fortification programs at the national level in the region. Dr Noel W. Solomons, from Guatemala, framed his remarks under the title "Balanced advocacy." His counterpart, Dr Wahlqvist, from Australia, chose the title "Policy in evolution." A point of contention was whether it was feasible or desirable for Asian populations to make major changes in their dietary patterns for the sake of consuming nutrients from nutrient dense foods. The former speaker favored fortification of staples or condiments, whereas the latter favored food-based approaches. Both speakers found common ground in the emerging promise of the bio-fortification of staple crops, such as rice and wheat, to increase their micronutrient content.

Dialogue D3 was on the topic "Current calcium recommendations," which initiated a discussion on calcium intake in early life and its implications for the accretion of skeletal bone mass and mineralization throughout life. Dr Connie Weaver, from the US, led the dialogue with her chosen topic, "Current calcium recommendations in North America for

children and adolescents.” Dr Warren Tak Keung Lee, from the UK (formerly from Hong Kong), addressed the topic of “Calcium requirements for Asian children and adolescents.”

The discussion focused on the reality of ethnic discrepancies in bone retention at equivalent levels of calcium intake; studies show that black adolescents, particularly females, retain and deposit more calcium in their bones than their white peers. Asian girls, whether living in the US or in East Asia, are also more efficient in the bony utilization of dietary calcium. The fulcrum issue remained whether the level of adequate intake recommended by the US Dietary Reference Intake is appropriate for ethnic groups other than North American Caucasians.

Symposia program

A total of 21 symposia were conducted during the morning and afternoon sessions of the second and third days of the Congress. Many of the symposium themes were outside our central area of interest, with only seven being of selected relevance to micronutrients. These are listed in Table 2.

The “Dietary pattern, health and total well-being” (S3) symposium was remarkable in its explicit exploration and promotion of “dietary quality.” This perspective on healthful eating goes beyond just satisfying energy needs; it also takes nutrient density, pattern of foods, and beneficial constituents into consideration. The symposium touched on ways to define and measure dietary quality, and even assess it with biomarkers.

The “Agricultural food production and public health” (S4) symposium included two topics of relevance to micronutrient nutrition. These included the development of rice varieties that improve human nutrition and a global perspective of plant-based health food from an agricultural point of view.

The “Approaches to combat double burdens: micronutrient deficiencies and complex diseases” (S5) symposium best embodied and exemplified the paradigm that SIGHT AND LIFE announced in September of 2006. The keynote address in this symposium by Dr Lindsay Allen, from the US, addressed the question, “To what extent can food-based approaches improve micronutrient status?” Dr Allen concluded that foods of animal origin could close some of the gap, but that fortification or biofortification is needed for full micronutrient security. Case-study discussions from Thailand, Vietnam, and Malaysia confirmed the difficulty of achieving a nutrient dense diet and, at the same time, the rise of overweight and chronic diseases in each Southeast Asian state.

An international panel in the “Nutrient-gene interactions” (S6) symposium explored the topic of Nutrigenomics, which touched on modern analytical capacity in genomic dissection, and the response of organisms to nutrient availability and food consumption. The diverse interaction of energy restricted diets, berries, folic acid, phytochemicals, and essential fatty acids with genetics and the genome were discussed.

The “Diet, nutrition and bone health” (S7) symposium was led by a keynote address by Dr Weaver on the role of nutrition in optimizing peak bone mass. Other talks within the symposium looked at calcium-isoflavone interactions in bone metabolism and the resurgence of the importance of vitamin D in bone health.

The “GMO foods” (S13) symposium was almost entirely devoted to issues of safety in relation to biotechnology products in the human and animal food chain. The discussion covered perspectives on safety, aspects of detection of genetic modification, and regulation and labeling issues.

The “Assessment and evaluation of diet in the Asian region” (S17) symposium included two topics of central relevance to micronutrient nutrition. These included how to adapt and apply the US Dietary Reference Intake approach to Asian countries, and a commentary on the limitations and resolution of dietary assessments for micronutrient intake.

Workshop sessions

Six workshops were offered, covering practical areas related to policy issues, institutional feeding programs, nutrition education through the mass media, metabolic and nutritional aspects of glutamate, innovation in food science, and improving nutrition research. Within these, two presentations emerged as highly relevant to SIGHT AND LIFE’s readers. Dr Patanee Winichagoon, of the Institute of Nutrition at the Mahidol University in Bangkok, presented on the “Co-existence of micronutrient malnutrition: implication for nutrition policy and programs in Asia.” Dr Winichagoon noted that multiple nutrients are often deficient in persons or populations; whether formulation of multiple micronutrient supplements or concerted food-based strategies are more feasible and appropriate is a regional policy question. Dr Eileen Kennedy, dean of the Tufts University Friedman School of Nutrition Science and Policy in the US, presented on “Public-private sector collaborations,” which looked at the opportunities for forming partnerships or alliances between industry and public sector entities. Dr Kennedy outlined four areas of contention that need to be addressed: 1) Lack of mutual trust; 2) Advertising to children; 3) Academics paid as consultants; and 4) Biases, transparency and conflict of interest.

Closing remarks

The Asian region has two nations with over a billion inhabitants each (China and India) and, overall, constitutes almost half of the world’s population. With Taiwan being the site of the 10th ACN and Singapore selected as the venue for the next Congress, it is not surprising that issues of chronic disease and long-term health are beginning to dominate the scientific agenda of the region’s scientists, given the highly urbanized settings and rising prosperity of these fast-growing economies.

However, it is also clear that there remain great economic, social, and environmental disparities between the countries of this region, and there will be increasing stresses from the double burden of under and overnutrition as the disparities widen. This is a region where the spectrum of nutritional disorders and chronic as well as infectious diseases will likely affect the greatest numbers of people. Looking forward, these problems look set to be further exacerbated by the nutrition and health impacts of progressive climate change.

SIGHT AND LIFE continues to support the fight against micronutrient Malnutrition by nurturing the skills and knowledge that can make a difference in communities the world over, and providing programmatic and other support to relevant interventions. This report is part of this ongoing support to our network of stakeholders around the world, to help connect us to the latest thinking in our field and make our work stronger.